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FURTHER TECHNICAL PROGRESS IN RIVER PORTS

- USSR -

by Ye. Seleznev

USSR - Seleznev  
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## FURTHER TECHNICAL PROGRESS IN RIVER PORTS

- USSR -

Following is a translation of an article by Ye. Seleznev in  
Rechnoy Transport (River Transportation), No. 4, Moscow, 1960,  
pp 9-12/

One of the decisive conditions for the successful fulfillment of the Seven-Year Plan, as mentioned in the decisions of the 21st Party Congress and the June Plenum of the Central Committee of the CPSU, is the extensive introduction of new equipment, complex mechanization and automation of production processes in all branches of the national economy, including transportation.

Ports and wharves are a very important part of river transportation; use of the fleet and an improvement in shipments of freight important to the national economy depend a great deal on their operation. Increasing the level of organizational work in ports, reducing idle time of ships during processing, reducing inputs of labor and funds for loading and unloading freight, introducing new equipment and new technology in transshipment operations -- these are our basic tasks for the near future. Modern hydraulic equipment, pneumatic transport, crane installations with large freight capacity, highly productive conveyor lines in combination with car tippers, unloading piers and systems of bunkers, machines for transportation within the port, and specialized freight gripping installations must be used as extensively as possible. During the next few years it is necessary to complete the work on the reconstruction and technical re-equipment of all existing ports and begin the construction of new highly mechanized ports.

The results of operation of ports and wharves in 1959 show that the basic tasks of the Seven-Year Plan can be fulfilled ahead of schedule. Here are these results: the annual plan for loading and unloading work was fulfilled ahead of schedule, on 17 October, and the plan for the fourth quarter was fulfilled by the 42nd anniversary of the Great October Socialist Revolution. The plan for loading and unloading work was fulfilled 109.2 percent; freight handling increased by 18.2 percent over 1958. Complex mechanization was used to handle 73 percent of the total volume of freight as compared with 66 percent in 1958; this is 80 percent of the level planned for 1965. Transshipment of freight in railroad and water communications improved notably, as the result of which the transshipment plan for the ministry as a whole was fulfilled for the first time. The average norm for processing ships was 55 percent

lower than that of 1958; 76.4 percent of all ships were processed on schedule or ahead of schedule as compared with 69.2 percent in 1958. The cost of processing freight fell by 3.5 percent and about 30 million rubles of above-plan income was received.

The good operation of the ports during the past year was the result of the creative initiative and strenuous work of the workers at the ports and wharves who developed socialist competition in fulfilling the plan for the first year of the Seven-Year Plan period ahead of schedule and well.

The following brigades of Communist labor were noted for their labor achievements: the collectives of the floating cranes in Leningrad Port (senior crane operators, Comrades Skotnikov, Malinovskiy and Piskunov), a brigade of drivers of motorized loaders in Kuybyshev Port (brigade leader, Comrade Badikov), brigades of loaders in Gor'kiy Port (brigade leaders, Comrades Pavlova and Lebedeva) and in Rostov Port (brigade leader, Comrade Butenko). The brigade leaders, Comrades Trofimov, Averin, Klochkov, Bondarenko and others, following the example and initiative of Valentina Gaganova, headed the work of lagging brigades, changing into progressive brigades.

Now the most important task in improving the operation of the ports is the implementation of the measures, confirmed by the ministry in 1959, which set forth the basic lines of technical progress in river transportation. The steamship lines must ensure the fulfillment of the tasks for the introduction of complex mechanization in loading and unloading, of new methods and new technology in loading work, etc., and the technical planning and design organizations must create new highly productive machines and gripping devices.

A meeting of chief port engineers which took place recently noted the achievements of some steamship lines and ports in the field of technical progress. In the capital's West and South ports (chief engineers, Comrades Lyalin and Markov) hydraulic equipment is used extensively to handle mineral building materials, the handling of stone with grab buckets was organized, timber is unloaded directly from the ship to the truck, and some operational processes have been automated. In the ports of the Moscow Steamship Line the level of complex mechanization of loading work in 1959 was 80.7 percent.

Personnel of Gor'kiy Port, (chief engineer, Comrade Sherle), in cooperation with the Gor'kiy Institute of Water Transportation Engineers, introduced automatic operation of conveyor lines at coal wharves, which made it possible to cut requirements for operating personnel in half and reduce the cost of handling a ton of coal by 20 kopecks. The engineer-electricians of the port, comrades Panasevich and Yegorov, worked out a scheme for the semiautomatic operation of port cranes. This scheme is recommended for use in all ports.

In Yaroslavl' Port, in the new transshipment area, centralized operation of transporter installations was put into operation, enabling a considerable reduction in the number of operating personnel and a reduction of 33 kopecks in the cost of handling one ton of freight.

In Yaroslavl' and Gor'kiy ports more than 90 percent of all mine props are handled by timber grab buckets without the use of manual labor, which saved over 180,000 rubles in 1959.

Thanks to progressive working methods and the use of new reloading machines, gross output per worker in Volga ports increased to 6,950 tons handled against a planned 5,500; the cost of handling freight was reduced by 9 percent and over 8 million rubles above-plan profits were obtained.

In Novosibirsk Port (chief engineer, Comrade Bulgakov), the construction of pneumatic reloaders was organized well. Now all grain transshipment points in the Ob'-Irtys' basin are provided with these machines. A high degree of complex mechanization has been achieved in the port in the processing of lumber shipped in rigid packets.

Rationalization work was conducted skillfully in Rostov Port (chief engineer, Comrade Varabin). There special gripping installations and very simple devices were created and the technology of reloading work was improved. The rationalizers, Comrades Moskalenok and Molchanov, designed an installation for turning grab buckets, increasing labor productivity by reducing the number of auxiliary workers at each crane by two. The saving from the introduction of rationalization proposals amounted to over 100,000 rubles.

In 1959 the technical planning and design organizations, jointly with the industrial and port personnel, created a new floating crane with a freight capacity of 5 tons and a 30 meter boom, a pneumatic reloader for cement, a hydraulic unloader with a capacity of 600 tons per hour for reloading mineral building materials, salt loading and paving block loading machines, and other equipment.

Technical progress also will lead to the further strengthening of the material-technical base of the ports, equipping them with highly productive machines, and putting modern engineering facilities into operation. During the past five years the number of port reloading machines has increased by 30 percent, mechanized facilities for use at wharves increased by 50 percent, and warehouse facilities increased by 60 percent. The number of traveling cranes more than tripled. In 1959 alone, 250 hoisting and transporting machines of different types were put into operation, including over 90 traveling and floating cranes, and 2.5 kilometers of new and reconstructed wharves.

The meeting of chief port engineers also pointed out great shortcomings in port work. The chief shortcomings are: poor organizational work in the field of introducing new equipment and mobilizing internal resources, and unsatisfactory checking and control of the execution of measures planned. This applies most of all to the Volga United Steamship Line, the Ob' and North-West steamship lines, and to the Omsk, Osetrovskiy and Kazan' ports.

Some steamship lines and ports have paid little attention to the complex mechanization of the most labor-consuming processes. While 85-90 percent of the sand, gravel and crushed stone is handled by complex mechanization, for many other types of freight only 10-40 percent is handled in this way (in the North Steamship Line -- 10 percent, the Kama Line -- 17 percent, and the North-West Line -- 29 percent). Annually some millions of tons of grain are processed with the efforts and equipment of the ports and wharves; however, despite the use of grain reloaders and grab bucket cranes, the technology of transshipping grain has not yet been completely mastered. Even in such a progressive port as the Moscow Southern, 50 percent of the cost of processing the grain is for loaders' wages. The cost of processing grain is also very high in Gor'kiy and Krasnoyarsk ports.

In 1959 only 26 percent of the total volume of work of loading and unloading timber freight was handled by new progressive methods; this cannot be considered normal since operating under the old techniques requires a great number of loaders and is expensive.

Although coal is unloaded with grab bucket cranes, much manual labor is spent throwing it up to the hatches and cleaning the holds. Thus, when motor vessels of the "Bol'shaya Volga" type are unloaded in Gor'kiy, 9 loaders are assigned to the work; when barges are unloaded as many as 18 are assigned.

The situation is similar in the unloading of ore, salt and other freight.

A special situation occurs when packaged or piece freight is processed. In 1959, 6.3 million tons of this type of freight was shipped; only 137,000 tons of this was shipped on pallets, and only 1.3 million tons was processed on pallets within the ports. This is entirely too little. In some ports the use of pallets is firmly entrenched and the technology of using them is being perfected (in Kuybyshev, Moscow Southern, and others). But there are other examples where the volume of freight processed on pallets is being reduced, and the pallets themselves are not used sufficiently.

These examples demonstrate the need to consider specific types of freight when solving problems of complex mechanization and to orient the work toward eliminating the greatest bottlenecks.

The shortcomings in the operation of the ports has a negative effect on the use of the fleet. In 1959 the fleet was idle in ports for about 45 million tonnage-days, including about 35 million tonnage-days for the transit fleet. The ships were handled especially poorly in Kuybyshev Port (chief, Comrade Kokurin, chief engineer, Comrade Ratnik). Here the fleet was idle for 4.5 million tonnage-days, comprising 41 percent of the above-plan idle time occurring in Volga ports. The fleet was also handled unsatisfactorily in Krasnoyarsk and Omsk ports.

Such large amounts of fleet idle time is the result of serious shortcomings in technology and in the organization of operational work in ports.



The heads of the ports must understand that technical progress is unthinkable without the creation of a new technology for reloading processes. A solution of this problem must be given maximum attention.

The correct technical operation of hoisting and transportation machinery and port facilities plays a great role in the work of the ports. At present there are great shortcomings in this field. Thus, the port services of the Volga United Steamship Line, and the Kama and North-West steamship lines do not undertake sufficient measures to introduce new methods in technical operation and study the experience of the progressive ports and steamship lines poorly.

The Volga United Steamship Line, having begun to introduce the brigade method of operating reloading machines, approached this matter formalistically and in essence jeopardized the new method of work.

During recent years progressive plant repair of floating cranes has been used ever more extensively. However, this problem is not treated seriously everywhere. Plant repair was unsatisfactorily organized in the Kama and North-West steamship lines.

In many ports the preventive repair of machinery and current repair of port facilities provided by the rules of technical operation are not completed on schedule. This causes the basic units and the parts to wear out prematurely and results in considerable costs for restoring the machinery and facilities.

However, machines in ports are used an average of 50-60 percent of the time; consequently, if the work is organized correctly it is always possible to find time for the necessary repair.

The unsatisfactory technical operation and the poor quality of the repair frequently causes large above-plan idle time of machines, as well as accidents. For example, during 9 months of 1959 alone, in ports of the Volga United Steamship Line machine idle time for above-plan repair amounted to about 200,000 hours. A similar picture was observed in the ports of the Kama, Volga-Don and North-West steamship lines. It is not by chance that in these steamship lines the costs for repair work are too high. In some ports costs for machine repair, per ton of reloaded freight, are not decreasing but, on the contrary, are increasing every year (Yenisey, Lena and other steamship lines).

Ports have not yet been fully supplied with the necessary interchangeable and spare parts, especially for imported machines and electrical equipment of cranes.

In addition to improving technical operation of reloading machines, it is necessary to devote great attention to the modernization of the existing equipment. Port personnel must respond extensively to the appeal of the Novo-Kramatorskiy Plant workers to raise the productivity of old equipment by modernizing it. It is first of all necessary to refit floating steam cranes, to convert steam boilers to liquid fuel. It is also necessary to continue the work of introducing pneumatic operation of cranes and to modernize conveyor installations, increasing their productivity.

In 1960 the volume of freight handled in RSFSR ports and wharves will be 14 percent greater than in 1959; 75 percent of the freight will be handled with complex mechanization. Grab bucket reloading of timber and stone will increase considerably; the total volume of this work will amount to over 4 million tons.

During 1960 it will be necessary to process over 6 million tons of freight with hydraulic equipment; to organize port processing, storage and transfer of over 2 million tons of packaged and piece freight on pallets; to considerably increase the processing of metal with electromagnets; and to improve the mechanization of internal port and car work.

In 1960 over 200 million rubles is being invested in the development and equipment of ports for operating facilities alone. In the ports, 1,200 linear meters of mechanized wharves and 2,000 linear meters of wharves of clientele, over 10,000 square meters of covered warehouse capacity, 80 modern traveling and floating cranes, over 100 motorized loaders, and a number of other machines will be installed.

Along with this, it is necessary to pay very serious attention to the possibility of more complete utilization of operational reserves existing in the ports. There are such possibilities. For example, the transshipment section of Yaroslavl' Port is utilized only 60 percent, and the designed capacity of the timber base in Gor'kiy Port, only 70 percent. In Kazan' Port in 1959 the designed freight turnover was achieved only for transshipment of coal; in the case of timber, cement, containers and packaged and piece freight, utilization of capacity is less than 50 percent. The designed capacity of the Zaostrovka section of Perm' Port is utilized 30 percent, etc.

One of the real reserves for improvement in port operation, for utilization of existing capacity, and for increased profits is the correct organization of port work throughout the whole year. The utilization of port capacity between navigation periods must have not only a productive character, but primarily a transportation character.

The chief engineers of the ports have the task of preparing the equipment for operation under winter conditions and also of implementing measures to increase warehouse area and to supply it with means of mechanization, using mainly internal reserves.

The number of industrial wharves is increasing through new construction. During the Seven-Year Plan period 25 kilometers of new wharves will be built.

Each chief port engineer must not only know all construction projects on wharves of the clientele, but must provide every possible assistance to the sovmarkhozes and departments in organizing construction.

The scientific, educational and technical planning and design organizations of the Ministry of River Fleet are assisting the port personnel in realizing the decisions of the June Plenum of the CPSU Central Committee on technical progress.

During 1959-1965 it is intended to increase freight turnover of river ports by 80 percent for dry freight and to increase the level of complex mechanization to 80 percent, compared with 65 percent in 1958. The Seven-Year Plan intends the completion of construction, the reconstruction and the new construction of 46 ports and wharves, including those which are intended for the development of substantial new movement of freight. It is intended that 15 kilometers of new wharf front be built, and that the number of traveling cranes be increased by 250 percent and the number of floating cranes by 110 percent. A very large growth in the use of motorized loaders and other port warehouse mechanisms is intended. Special attention will be given to the development of hydraulic loading and unloading of mineral building materials. The amount of sand reloaded with hydraulic equipment must amount to 45 million tons in 1965.

According to preliminary studies, by 1975 the ports and wharves of the Ministry of River Fleet will have the additional capacity which will permit the elimination of the existing imbalance between fleet capacity and port capacity.

The basic changes in the material and technical base and in the operational activity of the river ports and wharves intended by 1975 will make it possible to increase river port capacity to 4.5 times the 1959 level, to raise the level of complex mechanization to 95-98 percent, to reduce costs by 50 percent, and to increase labor productivity to 3 times the 1959 level.

In order to realize the decisions of the 21st Party Congress and the June and December Plenums of the CPSU Central Committee, great efforts are required from river transportation personnel in achieving further technical progress and improving the service of all enterprises, especially agriculture. There is no doubt that the port personnel will cope with these tasks.